

REMARKS

This is in reply to the office action dated 3/2/2006. After the foregoing amendment, claims 1, 3-7, and 9-12 remain in the present application, and claims 2 and 8 are canceled. Reexamination and reconsideration in view of the amendments and remarks herein is requested.

Claims 1 and 7 have been amended. The amendments are fully supported by the application as filed and thus no new matter has been added by the amendment.

Objection to the Specification

The specification was objected to by the examiner, requiring a new title of the invention. Appropriate correction has been made.

Rejection

Claims 1-12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,757,125 to Okada et al. Applicant respectfully traverses the rejection.

A feature of the invention of the present application is that a light beam detection device receives invisible light and emits visible light in response to the received invisible light. The device comprises a light-receiving means (or element) for receiving an invisible light beam and outputting a detection signal, a light detection circuit for generating and outputting a light-emission signal based on the detection signal, a light-emitting means (or element) for emitting visible light based on the light-emission signal, a detection portion (or member) on which the light-receiving means and the light-emitting means are arranged close together, a support for supporting the detection portion, and a driving means (or device) for moving the support in a reciprocative manner in an X axis direction and a Y axis direction to form a detection region with the detection portion. The light-emitting means forms an afterimage on the detection region

when the invisible light beam irradiates the detection region. Accordingly, the optical path location of invisible light can be detected by looking at the afterimage.

Okada et al. (US 3,757,125) discloses an optical tracking apparatus that tracks an object without having to contact the object being tracked. For example, the device of Okada can track the position between two plates to be welded, and thereby effect a control to allow a feed stand that supports a welding torch to track the weld line as it moves. See Okada column 1, lines 45-67; column 10, lines 3-10. A light source, such as a laser, is used to irradiate the object to be tracked and detects the reflected light from the object. The reflected light is converted to an electric signal and fed into a phase detector. The change in phase of the signal from the deflected light as compared to a reference signal is used to effect the desired tracking movement in response to displacements of the object being tracked. For the example involving a welding torch as set forth in Okada, if the welding line of an object being tracked is displaced, the tracking device, via the change in phase of the signal from the light reflected from the moved object as compared to the reference signal, effects the movement of the welding torch to reduce the displacement to zero, thereby keeping the welding torch at the weld line of the object. Okada has nothing to do with receiving invisible light and emitting visible light in response to the invisible light to allow detection of the invisible light.

The technological field of the claimed device is totally different from the Okada apparatus, and thus there is no motivation for modifying Okada to make the invention as claimed. In the device of claim 1, an invisible light is received, and then a visible light (a different light from the invisible light received) is emitted in response to the invisible light. Okada does not emit any light, let alone a visible light, in response to receiving an invisible light beam. On the contrary, Okada emits a light and detects the reflection of this same emitted light. It is the phase of this reflected light that is used to track movement of the object. Thus Okada does not teach or suggest the combination of

elements necessary for receiving invisible light and emitting visible light in response thereto, i.e., it does not teach or suggest, inter alia, a light detection circuit for generating and outputting a light-emission signal based on the detection signal (which was based on the light-receiving means for an invisible light beam), and a light-emitting means for emitting visible light based on the light-emission signal.

Moreover, the alleged motivation for the obviousness rejection set forth in the office action for modifying Okada to emit light based on a detection signal, as best understood, is inconsistent with the purpose of Okada. It is alleged in the office action that it would have been obvious to one of ordinary skill in the art to emit light based on a detection signal in order to ensure that the phase of the output signals of the light detector 23 and that of the scanning device 22 are in proper alignment. How or even why the phase of the output signals of the light detector 23 and that of the scanning device 22 are to be in "proper alignment" is not explained. The terminology "proper alignment" of the phases, does not appear in Okada. Moreover, Okada detects and uses the changes in the phase to track the object. Keeping the phase "properly aligned" with the phase of the reference signal as apparently suggested in the office action would prevent tracking and thus destroy the function of Okada, which is impermissible for purposes of making an obviousness rejection. See MPEP 2143.01. Claim 1 is thus believed patentable over Okada. Claims 3, 4, 5, and 6, depending from claim 1, are likewise believed patentable.

Furthermore, the Okada apparatus has a light detector 8 that is fixed. However, the claimed detection portion including the light-receiving means and the light-emitting means are moved together with the support by a driving means. This is also different from the Okada's apparatus and a further reason claim 1, and the claims depending there from, are believed patentable.

Claim 7, similar to claim 1, is believed patentable for similar reasons as set forth

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above. Claims 9, 10, 11, and 12, depending from claim 7 are likewise believed patentable.

Conclusion

In view of the foregoing amendment and remarks, it is respectfully submitted that the present application is in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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